WHAT IS CLAIMED IS:

1. A stochastic processor comprising:

a fluctuation generator configured to generate and output analog quantity having fluctuation comprised of chaos of tent mapping;

a mixer configured to output a fluctuation superposed signal with the analog quantity output from the fluctuation generator superposed on an input signal represented by analog quantity; and

a thresholding unit configured to perform thresholding on the fluctuation superposed signal output from the mixer to generate and output a pulse.

2. The stochastic processor according to Claim 1, wherein the thresholding unit is configured to perform the thresholding on the fluctuation superposed signal to generate a two-valued pulse.

3. The stochastic processor according to Claim 1, further comprising:

a pulse detection means configured to detect the pulse output from the thresholding unit.

4. The stochastic processor according to Claim 3, wherein the pulse detection means includes a counter configured to count the pulse.

5. The stochastic processor according to Claim 3, wherein the pulse detection means includes an integrator configured to integrate a width of the pulse.

6. The stochastic processor according to Claim 2, further comprising a variation detector configured to generate and output a pulse in at least one of rising and falling of the two-valued pulse output from the thresholding unit.

7. The stochastic processor according to Claim 6, further comprising a pulse detection means configured to detect the pulse output from the variation detector.

8. The stochastic processor according to Claim 7, wherein the pulse detection means includes a counter configured to count the pulse.

9. The stochastic processor according to Claim 7, wherein the pulse detection means includes an integrator configured to integrate a width of the pulse.

10. The stochastic processor according to Claim 1, wherein when a maximum value of the analog quantity having the fluctuation is w_{max}, and a maximum value and a minimum value of the input signal are V_{max} and V_{min}, respectively, a threshold T of the thresholding unit is not less than V_{max}, and w_{max} is equal to 1.5 times as large as or larger than difference between T and V_{min}.

11. The stochastic processor according to Claim 10, wherein T is equal to V_{max}, and w_{max} is equal to 1.5 times as large as difference between V_{max} and V_{min}.

12. The stochastic processor according to Claim 1, wherein when a maximum value of the analog quantity having the fluctuation is w_{max}, and a maximum value and a minimum value of the input signal are V_{max} and V_{min}, respectively, a

threshold T of the thresholding unit is

not less than ($2 w_{max} / 3 + V_{max}$) and not more than ($w_{max} + V_{min}$).

13. The stochastic processor according to Claim 12, wherein

T is equal to ($3w_{max} + 4V_{min}$), and

w_{max} is equal to 3 ($V_{max} - V_{min}$)

14. A stochastic computer comprising:

a fluctuation generator configured to generate and output analog quantity having fluctuation comprised of chaos of tent mapping;

a plurality of stochastic processing circuits including mixers and thresholding units, each of the mixers being configured to output a fluctuation superposed signal with the analog quantity output from the fluctuation generator superposed on an input signal represented by analog quantity, and each of the thresholding units being configured to perform thresholding on the fluctuation superposed signal output from the mixer to generate and output a pulse; and

a pulse detection means configured to detect pulses output from the thresholding units in the plurality of stochastic processing circuits.

15. The stochastic computer according to Claim 14, wherein the pulse detection means includes a counter configured to count the pulse.

16. The stochastic computer according to Claim 14, wherein the pulse detection means includes an integrator configured to integrate a width of the pulse.

17. The stochastic computer according to Claim 14, wherein one output ends of the thresholding units in the plurality of stochastic processing circuits are connected in parallel to a common wire having an end connected to the pulse detection means, and delay circuits are each provided on a portion of the common wire between positions where the output ends of the thresholding units are connected to the common wire.

18. The stochastic computer according to Claim 14, further comprising distance calculators in a predetermined number configured to calculate differences in elements in the predetermined number between the input vector and the reference vector, the stochastic processing circuits are provided in the predetermined number, and outputs of the distance calculators in the predetermined number are input to the mixers of the stochastic processing circuits in the predetermined number as the input signal, respectively.

19. The stochastic computer according to Claim 18, further comprising a plurality of stochastic distance calculation circuits having the distance calculators in the predetermined number and the stochastic processing circuits in the predetermined number, the pulse detection means are provided so as to correspond to the plurality of stochastic distance calculation circuits, and the plurality of reference vectors are input to the plurality of stochastic distance calculation circuits, respectively.